

UNIVERSITY OF CALIFORNIA

ANNOUNCEMENT OF THE  
GRADUATE DIVISION

*The Scripps Institution of Oceanography*

AUGUST, 1925

UNIVERSITY OF CALIFORNIA PRESS  
BERKELEY, CALIFORNIA

## SCRIPPS INSTITUTION OF OCEANOGRAPHY

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The Scripps Institution for Biological Research has begun the reorganization of the plan of its work. With the retirement of Director William E. Ritter and the assumption in 1924 of the Directorship by T. Wayland Vaughan the Institution will concern itself chiefly with oceanographic study. It is planned to make the institution an important center of research in that field. More detailed statements with reference to the plans to be adopted and the objectives to be sought will be made in the GRADUATE ANNOUNCEMENT for next year. Meanwhile a description of the institution's existing facilities is briefly given below. Lists of the publications of the present members of the staff indicating the fields of research occupying their attention heretofore are to be found in the reports of the President of the University. Owing to the transition period now existing and affecting the plans and objectives of the institution all students contemplating taking graduate work at La Jolla are advised to communicate with the Dean of the Graduate Division before making final plans.

*Location.*—The institution occupies a 177-acre "pueblo lot" situated on the ocean front, about 16 miles north of the center of San Diego City, and two miles north of the suburb of La Jolla. Both suburb and institution are within the corporate limits of the city.

Although this site on the open ocean was considerably isolated from human habitations and transportation facilities and introduced into the problems of development, difficult and expensive elements, which are now being steadily ameliorated, the great and unique advantages of the location for researches on the life of the open sea and on the sea itself, which researches have a central place in the institution's scientific programme; and the further advantage of ample ground on which to build, fully justify the hazards that have been taken.

*Housing and Equipment.*—At this time the chief buildings are: a fireproof research laboratory capable of accommodating about twenty-five investigators, five of the seven laboratory rooms on the first floor being equipped with salt water aquaria made of concrete and plate glass, and a circulatory system of lead and hard rubber, so that nothing corrodable is in contact with the sea-water; a two-story, fireproof, library building, which, for several years to come, will house both the

library and the biological and oceanographic museums; a reinforced concrete 20,000-gallon salt water tank with tank house; a 1000-foot concrete pier extending out to water eighteen feet deep at mean low tide; an electric motor pumping system for salt water, the pump being located at the outer end of the wharf so that the purest, most normal ocean water is obtained; a 40,000-gallon storage tank of reinforced concrete, at the base of the sea cliff under the wharf; 970 feet of retaining wall for the sea cliff, about half of which is concrete; a public aquarium building of wood containing 19 concrete tanks with plate glass fronts; 28 residences for the "colony"—scientists, assistants, workmen, etc.—associated with the institution; garages, service houses, etc.

The Institution also possesses a boat of 22 ton net capacity, length 64 feet overall, beam 15 feet, and draft 6 to 8 feet (according to load), estimated cruising radius of about 2000 miles. By means of this boat it will be possible to do oceanographic work extending several hundred miles off shore and for long distances along the American coast.

*Library.*—The library, which is growing rapidly, contains approximately 9686 bound volumes and 10,815 pamphlets well catalogued and shelved. About 220 volumes were added during the last year. The list of current journals, although by no means complete, is extensive and contains those of most importance. The library of the Director is also available for use by students at the Institution.

## OCEANOGRAPHY

*Prerequisite.*—Since oceanography is a science based on at least four other sciences, viz., physics, chemistry, biology, and geology, those intending to undertake research in it need a broad familiarity with the fundamental sciences and special preparation for the particular field of oceanography in which an investigation will be prosecuted. The requirements for work in oceanography are, therefore, classified as general and special.

The general requirements consist of a reading knowledge of scientific French and German and at least 34 units of undergraduate study distributed over three or four of the four sciences above mentioned, as follows: (1) Chemistry 1A-1B, 10 units; (2) Physics 3A-3B, 4A-4B, 8 units; (3) Zoology 1A, 1B, 8 units, Botany 2A, 2B, 8 units; (4) Geology 1A, 1B, 6 units, Mineralogy 1A, 2 units, or an equivalent amount of work in these subjects. It is advisable that each student should have had the entire 42 lower division units indicated but only 34 are required.

The special requirements consist in the completion of a 24-unit major in bacteriology, biochemistry, botany, chemistry, the geological sciences, physics, plant nutrition, or zoology in the College of Letters and Science, or an equivalent amount of work in some other university, in addition to the 34 lower division units above indicated.

## GRADUATE COURSES

200. Seminar in Oceanography. (1).  
 Director VAUGHAN, Associate Professors SUMNER, McEWEN,  
 Assistant Professor ALLEN, Dr. MOBERG.  
 Lectures and directed reading.
201. Research Conference. No credit.
202. Research in Oceanography.  
 Special preliminary requirements, courses, and credits to be arranged.  
 The required major is indicated after each course.
- (a) Geological Oceanography.  
 Director VAUGHAN, Associate Professor McEWEN  
 Major in geology.
- (b) Dynamical Oceanography. Associate Professor McEWEN  
 Major in physics.
- (c) Quantitative Studies of Microplankton.  
 Assistant Professor ALLEN, Associate Professor McEWEN  
 Combination major in botany and zoology.
- (d) Chemical Oceanography. Dr. MOBERG  
 Major in chemistry or biochemistry.
- (e) Ecology of Marine Organisms.  
 Director VAUGHAN and the Staff  
 Combination major in botany and zoology, or a major in  
 biochemistry, in plant nutrition, or physiology.